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136

Here is the story

of

DARILOID

(A Sodium Alginate Product)

the new ice cream

STABILIZER

DARILOID
REFINED
VEGETABLE
COLLOID

Technical Control of Ice Cream With Sodium Alginate

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IN the development of ice cream many products have been used as stabilizers to improve the body of the ice cream and to help, at least to some degree, in preventing a coarse texture due to the formation of large ice crystals during freezing and storage. Among these products are the various starches and gums and the gel-forming materials such as pectin, agar-agar[3], and gelatine. The starches and gums improved the texture and body of ice cream, but these advantages were more than offset by the filmy after taste and the undesirable melting characteristics which they impart to the ice cream[2].

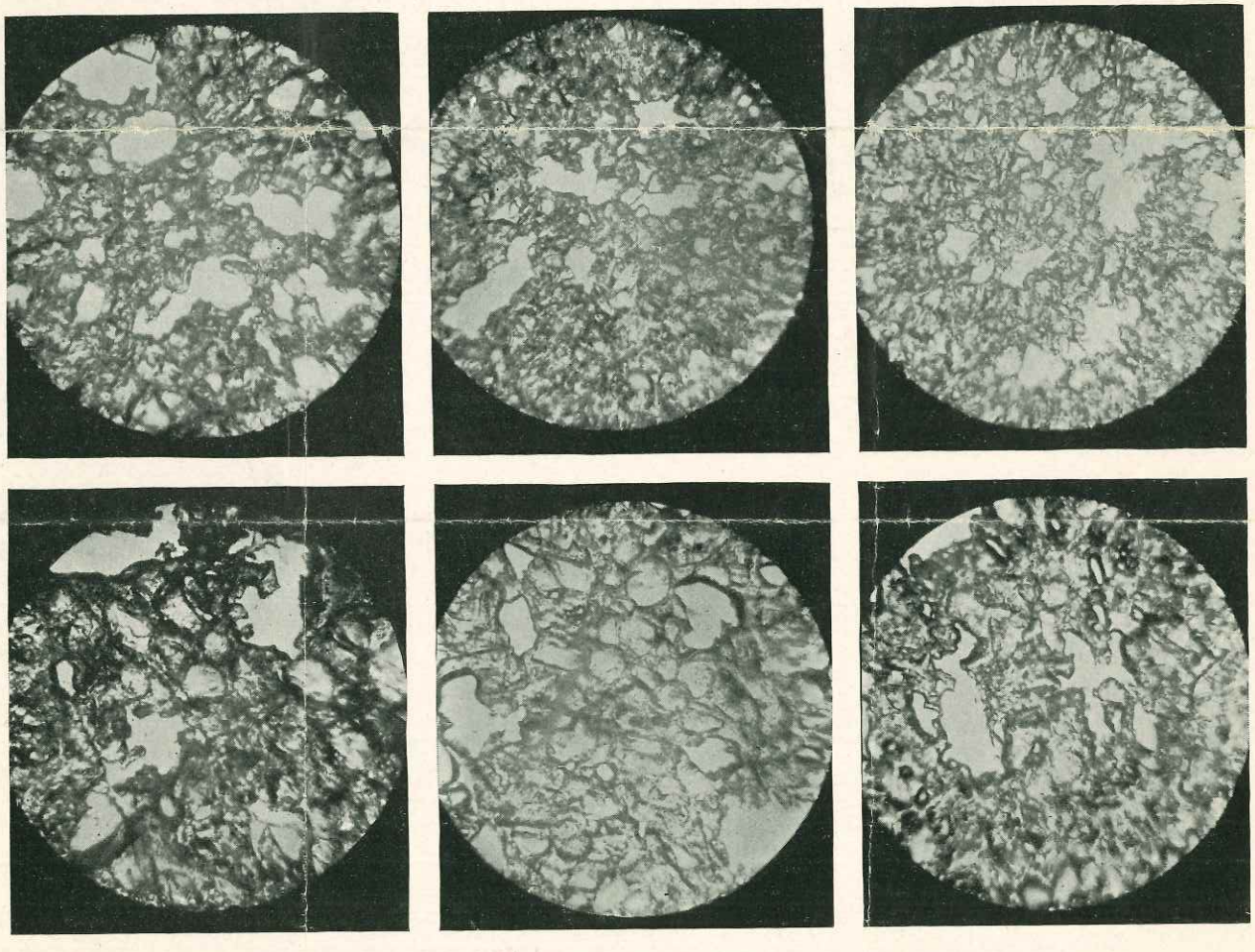
In recent years a very interesting vegetable product, technically known as sodium alginate, has come onto the market in a highly purified tasteless form, of uniform quality, for use in food products, and a certain grade of this material, because of its physical and chemical properties, has been found particularly suited for the stabilization of ice cream.

In addition to having the other desirable characteristics, sodium alginate is capable of producing better whipping of the mix, improved texture and better body characteristics in the ice cream. Only about 60 per cent as much of sodium alginate is used as is required of other stabilizers. For example, from 0.15 to 0.25 per cent gives a satisfactory stabilization of the ice cream.

The following experimental and commercial data are presented as a summary of the results which have been obtained from the use of sodium alginate as a stabilizer in ice creams.

TEXTURE

The primary function of a stabilizer is to limit the growth of ice crystals in the ice cream during the freezing, hardening and distribution of the product. There are numerous factors which determine to an even greater extent than the stabilizer the texture of the finished ice cream. Under a given set of commercial conditions, how-



MAGNIFICATION 175X

Figure I, reading from left to right, top: 10 per cent butterfat ice cream, 0.25 per cent sodium alginate; 12 per cent fat, 0.25 per cent sodium alginate; 14 per cent fat, 0.25 per cent sodium alginate. Bottom: 10 per cent fat, 0.3 per cent gelatine (250 Bloom strength); 12 per cent fat, 0.3 per cent gelatine (250 Bloom strength); 14 per cent fat, 0.3 per cent gelatine (250 Bloom strength). All samples contained 11 per cent serum solids and 15.0 per cent sugar. Large completely transparent (white) objects are air cells. Semi-transparent particles are ice crystals.

12

ly to the hydration and setting of the gelatine, and to a lesser extent, to the hydration of the milk proteins and clumping of globules." Consequently, in order to obtain the full efficiency from the gelatine, it is necessary to age the mix until the gelatine has been completely hydrated.

Sodium alginate is tasteless, hence it imparts no flavor whatever to either the mix or the finished product.

BACTERIA COUNT

Chemical processes involved in the extraction of the alginate from the kelp insure a product which is for all practical purposes free from bacteria. Samples of sodium alginate invariably show *bacteria counts of less than* 100 *per gram.*

Since sodium alginate is prepared from a chemical compound of definite composition, it is not subject to variations in efficiency or strength and hence an entirely uniform product is assured.

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2. Holdaway, C. W., & Reynolds, R. R.—"Virginia Agricultural Experiment Station Bulletin," No. 211 (1916).
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5. Prescott, S. C., and Heifetz, A. and Stanley Jr., D. S.—"A Study of Ice Cream Stabilizers," (1930).
6. Horrall, B. E.—"Purdue University Agricultural Experiment Station Bulletin," No. 375 (1933).
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Reprinted from the ~~January,~~ Feb 1935, issue of The Ice Cream Review

Use DARILOID to make your ice cream MORE MELLOW--SMOOTHER--BETTER

. . . and increase your profits

STUDY the photomicrographs on the opposite page. They give convincing proof that sodium alginate does more to make ice cream better, smoother in texture and more mellow than any other ice cream stabilizer. Not how much smaller the ice crystals (semi-transparent objects in the darker portion) and the air-cells (larger, irregular, completely transparent shapes) are in the sodium alginate ice creams than in the other three different samples.

Then turn to the photographs of the Screen Meltdown Test on the following page. Here is more proof that sodium alginate does help to put your product above competition — and makes it easier to sell in increasing quantities — which means more profits to you.

DARILOID—the ideal ice cream stabilizer—is a sodium alginate product, available in a highly purified, TASTELESS form—and always uniform in quality. Get a sample of DARILOID and try it in your ice cream.

KELCO COMPANY

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75 E. Wacker Drive, CHICAGO

DARILOID REFINED VEGETABLE COLLOID

530 West 6th St., LOS ANGELES